

REMARKS

Claims 1-9, 13-21 and 25-28 are pending in this application.

I. Rejection over Clark and Olarig

The Office Action rejects claims 1, 5, 9, 13, 17, 21, 25 and 27 under 35 U.S.C. §103(a) over Clark et al. (Clark), U.S. Patent No. 5,913,691, in view of Olarig et al. (Olarig), U.S. Patent No. 6,587,909. The rejection is respectfully traversed.

The combination of Clark and Olarig does not disclose and would not have rendered obvious the combination of features recited in independent claims 1 and 13, including an interlock control circuit and a CPU controlling the interlock control circuit to change a state of a high voltage supply to connection means that connects between high-voltage equipment and external equipment to a disconnected state in response to detachment of attaching means and prior to any movement of the connection means, as recited in independent claim 1 and similarly recited in independent claim 13.

The Office Action acknowledges that Clark fails to disclose these features, but continues to assert that they are disclosed by Olarig, and that it would have been obvious to one skilled in the art to modify Clark with the teachings of Olarig to result in the above recited features. Applicants respectfully submit that it would not have been obvious to modify Clark with the teachings of Olarig to result in the combination of features recited in independent claims 1 and 13. The Office Action's position is based on the allegation that:

Clark teaches a connector where the state of the electrical connection changes once the connection means of his connector (the male and female connectors) are fully pressed together. However, at that time, the mechanical connection isn't fully secure and could be pulled apart by hand, and if pulled apart fast enough a user could see some sort of spark, arcing, or worse due to the electrical connection already being made before the mechanical connection is secure (see page 2 of the Office Action).

However, this allegation is in direct contradiction to the express teachings of Clark.

Clark teaches that:

If mechanical connection of the power circuit is made or broken while the circuit is live, that is, connected to the main power supply, arcing will occur across the connector which may cause unacceptable heating and erosion at the points of electrical contact. As can be appreciated, since the male and female connectors 12 and 14 are electrically dead during making and breaking of their electrical connection, arcing is prevented (col. 5, line 66 to col. 6, lines 6, emphasis added).

That is, the dangers asserted by the Office Action to be present in Clark do not exist because they are prevented by Clark due to the fact that male and female connectors 12 and 14 are electrically dead during making and breaking of their electrical connection. Accordingly, the Office Action's reasons discussed above and on page 2 of the Office Action for why one skilled in the art would have modified Clark with the teachings of Olarig (i.e., so that disconnection of high-voltage external equipment in Clark's device can be "done as safely as possible to minimize the possibility of electrocution or shock" (see page 6 of the Office Action)) lack factual support and are based on a misunderstanding of Clark. Clark teaches that control circuit 70 is physically offset so that electrical connection or disconnection of the power supply is made only after the power circuit is fully mechanically connected or disconnected (see col. 5, lines 62-66). Therefore, even if the electrical connection is made prior to cam lever means 44 being locked, and the connectors are subsequently pulled apart, control circuit 70 would have de-energized the electrical connection before any of the conductors may be touched by a hand. Accordingly, there is no instance in Clark where power may be supplied to the connectors and the connectors touched by a hand causing a safety failure. Therefore, one skilled in the art would have had no reason to modify Clark with the alleged safety measures taught by Olarig.

Furthermore, Clark's cam lever means 44 and locking means 46 (the alleged attaching means or unit) are not detached from a body of a housing, as recited in independent claims 1 and 13. Cam lever means 44 merely moves downward, as indicated by the arrow in Fig. 1 (see col. 4, lines 24-27), and locking means 46 merely slides back to allow movement of the

cam lever means 44 (see col. 6, lines 64-67). Olarig fails to overcome the deficiencies of Clark. The Office Action asserts that Olarig's lever 18 also corresponds to the claimed attaching means or unit (see page 6 of the Office Action). However, Olarig merely teaches that lever 18 is moved from an open position to a closed position (see col. 3, lines 46-50 and col. 5, lines 28-37). Thus, the combination of Clark and Olarig also fails to disclose, and would not have rendered obvious attaching means or unit that are detached from a body of a housing, as recited in independent claims 1 and 13. Moreover, Clark is directed to stopping power when female and male connectors 12 and 14 are disconnected (see, e.g., col. 5, line 62 to col. 6, line 19), not when the cam lever means 44 and locking means 46 (the alleged attaching means or unit) are detached, as the Office Action asserts.

Thus, independent claims 1 and 13 are patentable over the combination of Clark and Olarig. Because claims 5, 9, 17, 21, 25 and 27 incorporate the features of claims 1 and 13, respectively, these claims also are patentable over Clark and Olarig for at least this reason, as well as for the additional features these claims recite. Thus, it is respectfully requested that the rejection be withdrawn.

II. Remaining Rejections

The Office Action rejects claims 2, 6, 14 and 18 under 35 U.S.C. §103(a) over Clark and Olarig, and further in view of Heberlein et al. (Heberlein), U.S. Patent No. 6,361,356; rejects claims 3, 7, 15, 19, 26 and 28 under 35 U.S.C. §103(a) over Clark and Olarig, and further in view of Saitoh et al. (Saitoh), U.S. Patent No. 5,274,722; and rejects claims 4, 8, 16 and 20 under 35 U.S.C. §103(a) over Clark, Olarig and Heberlein, and further in view of Saitoh. The rejections are respectfully traversed.

Because claims 2-4, 6-8, 14-16, 18-20, 26 and 28 incorporate the features of claims 1 and 13, respectively, and because Heberlein and Saitoh fail to overcome the deficiencies of Clark and Olarig, these claims also are patentable over the applied references for at least these

reasons, as well as for the additional features these claims recite. Thus, it is respectfully requested that the rejections be withdrawn.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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